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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

LIANG, REGINA

ART UNIT PAPER NUMBER

2674

DATE MAILED: 04/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/017,581

Applicant(s)

BABA ET AL.

Examiner

Regina Liang

Art Unit

2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-19 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 4-8, 10, 11, 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi et al (EP 0 700 215 hereinafter Takahashi).

As to claim 1, Fig. 1 of Takahashi discloses a field-sequential color display comprising time-sequentially displaying of luminous information of an input image information with every display color, changing the display color in synchronism with the displaying of the luminous information in order to display the input image information (see Fig. 3), wherein one frame period in which one color image is displayed comprised at least four sub-field periods in which information of each color is displayed (see the abstract for example), and a picture signal displayed in at least one sub-field period is a non-three-primary color picture signal (W signal) which is generated from at least two primary color signals of input picture signals including three-primary color signals (R, G, B, e.g., col. 4, lines 31-46) as claimed.

As to claims 2, 4, 5, Figs. 2A and 2B of Takahashi teaches the W signal displayed in the sub-field period is determined on the basis of the input video signal (see col. 4, lines 18-26).

As to claim 6, Fig. 8 of Takahashi shows the W signal displayed in the sub-field period is determined with every scene change of the input video signal.

Art Unit: 2674

As to claim 7, Fig. 1 of Takahashi teaches the picture signal displayed in each of the sub-field periods is one of modified picture signals (R', B', or G') which are obtained by separating the input picture signal (composite color video signal) into the n non-three-primary color picture signals (W signal, n is 1) and three modified three-primary color picture signals (R', B', or G').

As to claim 8, Takahashi teaches the W signal has a higher intensity than that of at least one of the modified R, G and B signals (col. 6, lines 25-31 for example).

As to claim 10, see Fig. 3 of Takahashi.

As to claim 11, Takahashi teaches the display unit comprising a monochrome display (11).

As to claim 13, Takahashi teaches the display unit having a signal separating circuit separating the R, G and B signals from the input picture signal as claimed (col. 4, lines 20-30).

As to claims 14 and 15, Figs. 1 and 6 of Takahashi teaches the monochrome image display (11) is a self-emissive type display unit, and the color display is a LC color shutter comprising LC cells (16, 18) and polarizers (15, 17, 19).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi in view of Sugiura et al (US. PAT. NO. 6,621,497 hereinafter Sugiura)..

As to claims 3 and 12, Takahashi teaches the non-three-primary color picture signal is a W signal. Takahashi does not disclose the non-three-primary color picture signal is any one of C, M and Y which are generated from the at least two primary color picture signals. However, Fig. 1 of Sugiura teaches C, M and Y non-three-primary color picture signals are generated from the R, G, and B primary color picture signals. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the display device of Takahashi to have the non-three-primary color picture signals including any one of W, C, M and Y which are generated from the primary color picture signals so as to obtain six hue data and a good conversion can be achieved without being influenced by the non-linearity of the input image data and no large-capacity memories are necessary.

5. Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi in view of Someya et al (US. PAT. NO. 6,392,656 hereinafter Someya) and Stanton (US. PAT. NO. 5,428,408).

As to claim 16, Takahashi does not disclose the field-sequential color display unit is a projection type display unit having an optical lens for enlarging a field-sequentially displayed color image to project the image on a screen. However, Someya suggests "field sequential color is used in, for example, projection television system, data projectors, head-mounted displays monitors, and viewfinders, where it enables high-resolution color images to be displayed with comparatively few monochromatic picture elements" (col. 1, lines 9-10). Stanton teaches a projection type display unit having an optical lens for enlarging a displayed color image to project the image on a screen. Thus, in view of Someya's suggestion, it would have been

Art Unit: 2674

obvious to one having ordinary skill in the art at the time the invention was made to modify the field-sequential color display unit of Takahashi to be a projection type display unit and further having an optical lens as taught by Stanton so as to provide a large field-sequentially color image on a projection screen and to reduce color breakup in a field-sequential color image display.

As to claim 17, Someya teaches the color display comprising a color wheel (Figs. 6, 7, 13 of Someya).

As to claim 18, Someya teaches the color display unit is a head mounted display (col. 1, lines 9-10).

6. Claims 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi in view of Zhang et al (US. PAT. NO. 5,461,397).

Takahashi does not disclose the image display is a transmissive type-liquid crystal light valve and the color display is a backlight provided on the backside of the liquid crystal light valve. However, Figs. 1 and 2 of Zhang teaches a display device having a LC light valve (34) and a color backlight (32) provided on the back side of the LC light valve, the backlight having a plurality of light sources capable of time-sequentially selecting the RGB colors to emit light (col. 8, lines 3-28 for example). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the display of Takahashi to be a transmissive type-liquid crystal light valve and having a backlighting as taught by Zhang so as to reduce the crosstalk between subsequent color fields in a multicolor or full color display (see col. 5, lines 31-36 of Zhang).

Art Unit: 2674

Allowable Subject Matter

7. Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion


8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kanai et al (US. PAT. NO. 6,034,666) teaches a system and method for displaying a color picture.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Regina Liang whose telephone number is (703) 305-4719. The examiner can normally be reached on Monday-Friday from 9AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on (703) 305-4709. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.


REGINA LIANG
PRIMARY EXAMINER
ART UNIT 2674

RL
4/1/04